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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/540,666	03/08/2006	Vincent Fischetti	600-1-295PCTUS	2384
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KLAUBER & JACKSON 411 HACKENSACK AVENUE HACKENSACK, NJ 07601				
EXAMINER				
MARX, IRENE				
ART UNIT		PAPER NUMBER		
1651				
MAIL DATE		DELIVERY MODE		
11/16/2009		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/540,666

Applicant(s)

FISCHETTI ET AL.

Examiner

Irene Marx

Art Unit

1651

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 September 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 17 and 23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 17 and 23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)
- Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7/15/09 has been entered.

Claims 17 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fischetti *et al.* (I)(U.S. Patent No. 6,264,945) taken with Marova *et al.* (Folia Microbiol. 38 (3), 245- 252 (1993)), Fischetti *et al.* (II)(U.S. Patent No. 6,056,954), Sanz *et al.* (Eur. J. Biochem. 187,409-416 (1990)) and Loeffler *et al.* (Science **294**:2170-2172).

The claims are directed to a composition comprising undisclosed amounts of bacteriophage derived lytic enzymes Cpt-I and Pal having a certain desired effect.

Fischetti *et al.* (I) teach a composition comprising at least two lytic enzymes which are an amidase and a muramidase. See, e.g., col. 7, lines 9-25, wherein it is taught that a phage lysin is combined with lysostaphin. It is noted that lysostaphin is an amidase that comprises hexosaminidase (N-acetylglucosaminidase), glycyglycine-endopeptidase and N-acetylmuramyl-L-alanine-**amidase**, as demonstrated by Marova *et al.* (See, e.g., page 245, paragraph 2).

The composition of Fischetti *et al.* differs from the claimed composition in that it is not specifically indicated as being solely "bacteriophage obtained" and in comprising Pal and Cpl-1.

However, Fischetti *et al.* (II) strongly suggests the use of several bacteriophage lytic enzymes in combination. See, e.g., col. 13, lines 16-25.

In addition, Loeffler *et al.* teach the favorable properties of the cell wall degrading enzyme Pal, while Sanz *et al.* teach the favorable properties of Cpl-1 lysozyme. The references indicate that both enzymes are active on the dangerous pathogen *P. pneumoniae*. See, e.g., respective Abstracts and Loeffler *et al.*, page 270, paragraph 1; Sanz *et al.*, page 410, paragraph 5. Therefore, one of ordinary skill in the art would have included them at the time the claimed invention was made in an anti-pneumococcal or antimicrobial composition with a reasonable expectation of success.

One of ordinary skill in the art would have had a compelling motivation in providing a combination of various bacteriophage derived enzymes as taught by Fischetti *et al.* (II) and/or replacing the lysostaphin degradative enzymes in the composition of Fischetti *et al.* (I) with bacteriophage derived enzymes having the same or similar degradative activity, such as Pal and Cpl-1 for their recognized beneficial properties that include specificity for certain dangerous pathogenic bacteria including *S. pneumoniae* as well as stability.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the claimed invention was made to modify the composition of Fischetti *et al.* (I) by replacing the degradative enzymes therein with bacteriophage derived degradative enzymes as taught by Fischetti *et al.* (II) in particular Pal and Cpl-1 as suggested by the teachings of Loeffler *et al.* and Sanz *et al.* for the expected benefit of providing anti-microbial composition having powerful degradative activity and suitable for the control of the dangerous and resistant bacterial pathogen *P. pneumoniae*.

Thus, the claimed invention as a whole was clearly *prima facie* obvious, especially in the absence of evidence to the contrary.

Response to Arguments

Applicant's arguments have been fully considered but they are not deemed to be persuasive.

Applicant argues that the combination of references does not teach or suggest the synergistic combinations of the particular two or more bacteriophage lytic enzymes. Applicant argues that the composition delineates the subject of killing with specificity.

Applicant fails to appreciate that the invention as claimed is not specific as to the concentrations of phage enzymes, including the concentration of the amidase Pal and the muramidase Cpl-1 required to make the composition "synergistic" as claimed. Regarding the issue of killing, *S. pneumonia* shown on a logarithmic scale, the extent of "more" is not clearly delineated.

In addition, "synergism" has not been demonstrated for the compositions as claimed, wherein no specific amounts are designated. In addition the effects of the addition of further enzymes cannot be readily assessed. There is no clear indication as to the circumstances required for the composition to "show" the touted effects of being "more than additive".

Synergism is an unpredictable phenomenon, highly dependent upon specific proportions and/or amounts of particular ingredients. Accordingly, the instant claims, in the range of proportions where no unexpected results are observed, would have been obvious to one of ordinary skill having the above cited references before him.

From the teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole was prima facie obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

The intended use of the composition does not distinguish the composition since such undisclosed use is a natural effect of the compositions taught by the references. In order to be limiting, the intended use must create a structural difference between the claimed composition and the prior art composition. In the instant case, the intended use does not create a structural difference, thus, the intended use is not limiting. "The claiming of a new use . . . which is inherently present in the prior art does not necessarily make the claim patentable." *In re Best*, 195 USPQ 430, 433 (CCPA 1977). When applicant claims a "composition in terms of function . . . and the composition of the prior art is the same as that of the claim but the function is not explicitly disclosed by the reference, the Examiner may make a rejection under both 35 U.S.C. 102 and 103, expressed as a 102/103 rejection" (MPEP 2112).

Only at Figure 2 of the as-filed specification are data provided that suggest the achievement of a combination of an amidase and a muramidase "wherein the combination of the at least two enzymes shows more than additive killing on a logarithmic scale" for certain, specific strains of *S. pneumoniae*. These data are obtained by treating samples of certain, specific strains of *S. pneumoniae* with the specific amidase Pal and muramidase Cpl-1 **at specific concentrations**. The record is not informative regarding the effects of other concentrations on other *S. pneumoniae* strains. There is nothing on this record to demonstrate that providing at the specific amidase Pal and muramidase Cpl-1 in undisclosed amounts will have effects "wherein the combination of the at least two enzymes shows more than additive killing on a logarithmic scale" of any *S. pneumoniae*.

The scope of the showing must be commensurate with the scope of claims to consider evidence probative of unexpected results, for example. In *re* Dill, 202 USPQ 805 (CCPA, 1979), In *re* Lindner 173 USPQ 356 (CCPA 1972), In *re* Hyson, 172 USPQ 399 (CCPA 1972), In *re* Boesch, 205 USPQ 215, (CCPA 1980), In *re* Grasselli, 218 USPQ 769 (Fed. Cir. 1983), In *re* Clemens, 206 USPQ 289 (CCPA 1980). It should be clear that the probative value of the data is not commensurate in scope with the degree of protection sought by the claim.

Therefore the rejection is deemed proper and it is adhered to.

No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Irene Marx whose telephone number is (571) 272-0919. The examiner can normally be reached on M-F (6:30-3:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Wityshyn can be reached on 571-272-0926. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300 .

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Irene Marx/
Primary Examiner
Art Unit 1651